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checking too free interpretation of purely embryological processes, are not discussed. In the introduction the credit of the correlation of the development of the individual and the class to which it belongs, should have been given to Agassiz and to Milne-Edwards, however much it has been extended and modified by later evolutionists. We find little to criticise in the author's general views. The illustrations, where originally prepared for the work, are nearly faultless, with two or three exceptions.

THE ODONTORNITHES, OR BIRDS WITH TEETH.<sup>1</sup>—The present memoir presents the results obtained by Prof. Marsh from the study of the remains of this interesting group, procured by him during the last ten years. It is generally known that the specimens which represent the *Odontornithes* have only been found in America in the Niobrara Cretaceous, or No. 3 of Meek and Hayden, and within the geographical limits of the State of Kansas. Prof. Marsh's book sets forth principally the osteology of four species of the group, viz: *Hesperornis regalis*, *Apatornis celer*, *Ichthyornis dispar* and *Ichthyornis victor*, all discovered and named by himself. This work appears to have been well done, and it is worthily supplemented by thirty-four good lithographic plates. The conclusions of the author respecting the affinities of the genera of which he treats, are fully and clearly set forth. His discussion of the probable phylogenetic relations of *Hesperornis* are especially interesting. He shows that the modern affinities of this genus are with the Struthionoid types, while those of *Ichthyornis* and its allies are remotely to the *Longipennæ*. He includes *Archæopteryx* in the same primary division. Thus constituted the *Odontornithes* are a group "homologous" with a part (perhaps all) of the remainder of the class Aves, and the two great divisions thus formed embrace corresponding or "heterologous" subgroups. In his discussions the author adopts the theory of the production of modification of structure by use, a doctrine first fully formulated in an essay in this journal.<sup>2</sup>

A supplement to the chapters above mentioned includes a synopsis of all the species of birds hitherto found in the Cretaceous formations of North America, twenty in number, all named by the author. We should like to have seen introduced here some clear descriptions of several of the genera named by Prof. Marsh, but whose characters we are yet unacquainted with. Some reference to the first discovery of birds with biconcave vertebræ in England by Seeley, in 1870,<sup>3</sup> would also have been in place. Mention of the extent and character of the services for which Mr. Oscar Harger is thanked in the introduction, would also have been proper.

<sup>1</sup> *The Odontornithes, or Birds with Teeth.* By O. C. MARSH. Memoirs of the Peabody Museum of Yale College, Vol. I, 1880. 4to, pp. 200.

<sup>2</sup> 1871, p. 603. Proceed. Amer. Philos. Soc., 1871, 253.

<sup>3</sup> *Annals Magaz. Nat. Hist.*, p. 129.